

IN THE CLAIMS:

1-6. (Canceled)

7. (Currently amended) An isolated and purified nucleic acid molecule encoding a biologically active KCC3a potassium-chloride cotransporter polypeptide selected from the group consisting of:

- (a) a biologically active KCC3a polypeptide encoded by a nucleic acid sequence as set forth in SEQ ID NO 15;
- (b) a biologically active KCC3a polypeptide comprising an amino acid sequence at least 95% identical to SEQ ID NO: 16 encoded by a nucleic acid molecule comprising a nucleic acid sequence having 90% or greater sequence identity to SEQ ID NO 15;
- (c) a biologically active KCC3a polypeptide having an amino acid sequence as set forth in SEQ ID NO 16; and
- (d) a biologically active KCC3a polypeptide comprising an amino acid sequence at least 95% identical to SEQ ID NO: 16,

wherein the biologically active KCC3a polypeptide has potassium-chloride cotransporter activity.

8-10. (Canceled)

11. (Original) The nucleic acid molecule of claim 7, further defined as positioned under the control of a promoter.

12. (Canceled)

13. (Original) A recombinant host cell comprising the nucleic acid molecule of claim 7.

14-58. (Canceled)

59. (Previously presented) An assay kit for detecting the presence, in biological samples, of a nucleic acid encoding a KCC3a potassium-chloride cotransporter polypeptide, the kit comprising a first container that contains a nucleic acid molecule identical or complementary to a segment of at least ten contiguous nucleotide bases of nucleotides 1-434 of SEQ ID NO: 15.

60-100. (Canceled)

101. (Previously presented) A recombinant vector comprising a nucleic acid molecule of claim 7.

102. (Previously presented) The recombinant vector of claim 101, wherein the recombinant vector is a recombinant expression vector.

103. (Previously presented) The recombinant vector of claim 101, further defined as comprising at least a 100 nucleotide long contiguous stretch of a polynucleic acid sequence as essentially set forth in nucleotides 165-434 of SEQ ID NO: 15.

104. (Withdrawn) A isolated and purified nucleic acid molecule encoding a human KCC3a potassium-chloride cotransporter polypeptide or a mouse KCC3a potassium-chloride cotransporter polypeptide, wherein the isolated and purified nucleic acid molecule:

- (i) comprises a nucleic acid sequence having at least 90% nucleotide sequence identity to at least of one of SEQ ID NOs: 3, 5, and 7; or
- (ii) encodes a KCC3a potassium-chloride cotransporter polypeptide comprising an amino acid sequence having at least 95% amino acid sequence identity to of one of SEQ ID NOs: 4, 6, and 8

wherein the KCC3a potassium-chloride cotransporter polypeptide has potassium-chloride cotransporter activity[.].

Please add the following new claims:

105. (New) An isolated and purified nucleic acid molecule encoding a biologically active KCC3a potassium-chloride cotransporter polypeptide selected from the group consisting of:

- (a) a biologically active KCC3a polypeptide having an amino acid sequence as set forth in SEQ ID NO 16; and
- (b) a biologically active KCC3a polypeptide comprising an amino acid sequence at least 95% identical to SEQ ID NO: 16,

wherein the biologically active KCC3a polypeptide has potassium-chloride cotransporter activity.

106. (New) The nucleic acid molecule of claim 105, wherein the nucleic acid molecule is operatively linked to a promoter.

107. (New) A recombinant host cell comprising the nucleic acid molecule of claim 105.

108. (New) A recombinant vector comprising a nucleic acid molecule of claim 105.

109. (New) The recombinant vector of claim 108, wherein the recombinant vector is a recombinant expression vector.

110. (New) The recombinant vector of claim 108, wherein the recombinant vector comprises at least a 100 nucleotide long contiguous stretch of a polynucleic acid sequence as essentially set forth in nucleotides 165-434 of SEQ ID NO: 15.